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Extraſts of two Letters, written by Francis Willoughby Eſquire, to the Publiſher, from Aſtrop, Auguſt 19th and from Midleton, Sept. 2^d. 1670 Containing his Obſervations on the Inſects and Cartrages, deſcribed in the precedent Accompt.

1. **I** had the good luck to find a great many of your Cartrages in a rotten Willow ; and, by the ſhape of the Maggot, was moſt confident, they would produce Inſects of the Bee-tribe. And this I ſhould moſt certainly have foretold you, had I ever received thoſe you ſent me by Mr. *Le Hunt* : But having only that one, you ſent me before, I was ſo fond and choiſe of it, that I durſt not open it. I think now, I have found out the whole myſtery ; and if you pleaſe to ſend me Dr. *Kings* account, and one of your Bees, I may perhaps add ſomething ; and ſhall be glad to be inſtructed in any thing, that hath eſcaped me. I deſire one of the Bees, becauſe all mine being of a late Hatch, and none of them yet turned into *Nymphs* (which is the word of Art for the *Aurelia* of a Bee,) I fear, I ſhall not ſee their laſt *Metamorphoſis* this year. In a Garden, near a Willow, I found, where they got their leaves for their Cartrages ; which are not Willow but Roſe-leaves. I will now proceed no further.

2. At my coming home I found the long expected Cartrages, and ſome of the Bees hatched ; ſo that now we want nothing to compleat their Hiſtory. I will trouble you only with thoſe particulars, that I find not mentioned in Dr. *Kings* paper, to whom we owe the knowledge of their productions, and whoſe obſervations concerning them our own experience hath ſince confirmed. Mr. *Snell*, an Ingenious Gentleman, brought of them to the Wells at Aſtrop, who directing me to the place where he got them, I there found great plenty in the Trunk of a dead Willow.

Beginning

Beginning to unfold some of them, Mr. *Wray* immediately judged them to be made up of pieces of Rose-leaves, and called to mind, that this very Spring a worthy friend of his, Mr. *Francis Jessop*, brought him a Rose-leaf, out of which himself saw a Bee bite such a piece, and fly away with it in her mouth. Whereupon searching the Rose-trees thereabout, we found a great many leaves, with such pieces bitten out of them, as these Cartrages are made up of; some of which I sent you inclosed in my last. The *Cuniculi* or holes never cross the grain of the Wood, excepting where the Bee comes in, and where they open one into another. From the place of entrance, they are wrought both upwards and downwards; so that sometimes the Bee-maggot lyes under her food, and sometimes above it. One end of the Cartrage, *viz.* that which is next the entrance, is alwaies a little concave; the other end, which is furthest from the entrance, a little convex, and is received into the concave of the next beyond it. The sides of the Cartrages are made up of oblong pieces of leaves, and pasted together; the ends, of round ones: And where ever they do not lye close one to another, the intermediate space is filled up with a multitude of these little round pieces, laid one upon another.

These leaves were well delivered to the Publisher.

The Cartrages contain a pap or batter, of the consistence of a Gelly, or something thicker; of a middle colour between Syrup of Violets and the Conserve of red Roses; of an acid taste, and unpleasant smell. In each of these, at the Concave end there lies one Bee-maggot, which feeds upon the forementioned matter, till it grows to its full bigness, and then makes, and encloseth her self in, a *Theca* or husk, of a dark-red colour, and ovall Figure; in which she is changed into a Bee. The remainder of her food you may find dried into Powder at the Convex end; and her excrements at the Concave without the *Theca*.

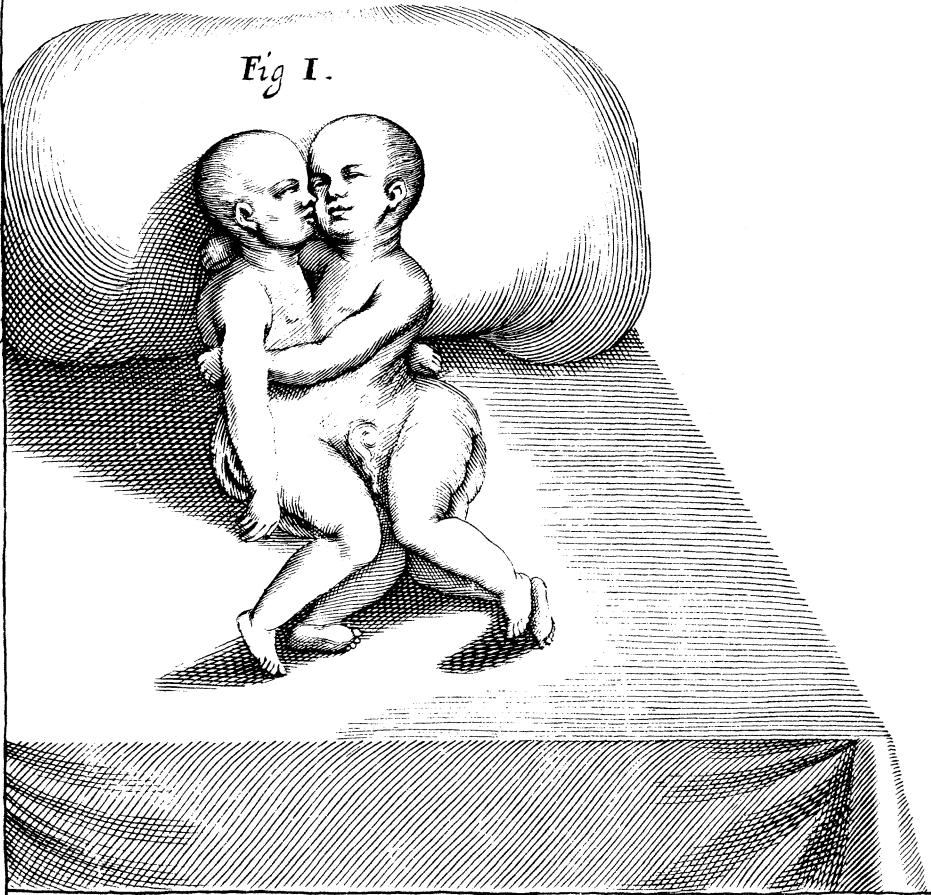
The Bees, I found in your box (which are the only ones I have yet seen) were of a shorter and thicker shape, than the common Honey-bee, more hairy, &c. But the surest mark to distinguish them, is, that the *forcipes* or teeth of these are bigger, broader, and stronger; in shape like those of a Wasp or Hornet; from which she also sufficiently differs in having a tongue like a Bee, which *they* want.

They made their way out along the channel thorough all the intermediate carriages, and not thorough the solid wood. Of the corruption of the matter within the Cases, when the Bee-maggots or *Nymphae* happen to miscarry, are bred little *Hexapods*, which produce Beetles; ^{several} ~~too~~ Maggots, which produce Flies; ~~three~~ Mites, &c.

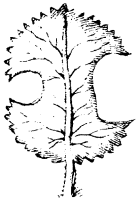
From what hath been observed concerning this Bee, and by a great many more parallel Instances, we may answer the *Quære* of some, that have written of Bees, whether it be the Old Bee, or the Bee-maggot, that covers the Cells before the Change? And say, that it is the Maggot, and not the Old one. For, here the Old Bee, when she hath left provision enough, with an Egge closes up the Carriage; and hath no more to do: The Maggot a great while after making the *theca*, which is analogous to the cover of the Cells.

In Table 2; Figure II. represents the Leaf, out of which a long piece, as Figure III. and a round piece, as Figure IV. were bitten. Figure V. shews the Carriage it self; and Figure VI. the *theca*.

Fig I.



II



III



IV



V



VI



VII



VIII

